A look into Chicago's electric vehicle future

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During the 1990s, enthusiasm for electric vehicles (EV) was all the rage. California, in particular, became known for encouraging the use of EVs by installing charging stations, a practice that would remain foreign to much of the country until decades later.

Interest in EV technology slowed dramatically after the '90s, in part because of gas prices. "The price of gas really has an impact on how excited people are to talk about electrification technologies," and there was a renewed push five to 10 years ago when prices climbed, said Elizabeth Irvin, transportation planner for the Chicago Metropolitan Agency for Planning (CMAP). When people get used to high gas prices, "there's less of that big push to get these vehicles out on the road."

But attention to EVs is surging again, especially in cities like Chicago that are committing to greater electric vehicle infrastructure investments.

"There are a lot of conversations about this right now," Irvin said. "We're looking at trends in the region [and] emerging technologies, and talking to the public about what they see as the future."

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The information gathered in those conversations will help to form On To 2050, the region's comprehensive plan scheduled for adoption in the fall, which is an update of the previous plan, Go To 2040. Two of the primary themes in the preliminary plan are resilience and mobility, especially through innovative transportation. "Some of the things we talked with folks about were... automated vehicles and electric vehicles, and asking how we make this technology work for the region," Irvin said.

As a regional planning body covering seven counties in the greater Chicago area, CMAP frequently works with the individual municipalities "to help them set policies that encourage investments and change behavior... to encourage people to take shorter trips, carpool, that sort of thing," Irvin said. More widespread EV use is one of those behavior change goals.

One of CMAP's responsibilities is to administer funds for various projects under the Drive Electric Chicago effort, which is "specifically designed to improve emissions. To take older vehicles, typically diesel but some of them gasoline, out of the fleet and replace them with cleaner technologies, in this case electric," said Doug Ferguson, CMAP project manager for the congestion mitigation and air quality improvement program.

Last October, CMAP awarded Chicago a \$15.5 million federal grant for EV infrastructure. The grant will fund 182 electric fleet vehicles including six electric airport buses, plus nine fast-charging stations and 182 lower level charging stations.

The program will cut an estimated 1 kg of volatile organic compounds daily, which is important because "those are one of the major precursors for ground level ozone," Ferguson said. "It doesn't seem like a lot, but when you add that up on a daily basis that starts making a huge difference." The city estimates the additions to its electric fleet will reduce greenhouse gas emissions overall by more than 10,000 tons.

Besides reducing emissions, switching out diesel- or gas-powered city fleet vehicles for electric "also helps create a good example and creates a market for electric vehicles," such as for residents' personal vehicles, Ferguson said. The city fleet programs essentially could kick-start the widespread adoption of EVs throughout Chicago. Although initial plans indicate the new charging stations will be solely for fleet vehicles, that potentially could change.

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Another initiative CMAP is involved with is the expansion of Chicago's electric transit fleet, namely city buses. The Chicago Transit Authority (CTA) currently has an open request for proposals for a company to manufacture between 20 and 45 all-electric buses and up to 13 en-route charging stations. The buses are in line with the city's goal of transitioning its passenger fleet to 25% EVs by 2023. CTA has been operating two electric buses since 2014.

Despite the goals for more widespread EV use, executing the plans — both for municipal and residential vehicles — isn't always easy. "On some [bus] lines it's going to be difficult... because of the charging stations and needing to have those strategically placed," Ferguson said. Irvin agrees, noting that "the charging infrastructure is a challenge, particularly for personal vehicles... particularly in urban areas." For example, people living in apartments don't have many options unless their building has EV charging stations, because it's not possible to "run an extension cord from your living room out to the street."

Chicago's current EV expansion plans are being put into place and the closing date for CTA's electric bus RFP comes next month. But in the meantime CMAP continues to plan for the future with On To 2050 and other initiatives. "One of the challenges of long-range planning is to anticipate what's going to come down the road, especially as technology keeps changing," Irvin said.